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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/082,865	10/19/2001	Reiner Koppe	DE000137	4959

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EXAMINER

MCCALL, ERIC SCOTT

ART UNIT	PAPER NUMBER
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2855

DATE MAILED: 06/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/082,865

Applicant(s)

KOPPE ET AL.

Examiner

Eric S. McCall

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

TOMOSYNTHESIS IN A LIMITED ANGULAR RANGE

FIRST OFFICE ACTION

ABSTRACT

✓ Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because of the use of the legal phraseology "means" (line 2). Correction is required. See MPEP § 608.01(b).

SPECIFICATION

✓
SEE NOTE

The specification is objected to because the various sections of the specification are not separated by the proper section headings. Correction is required.

✓
SEE NOTE

Also, the specification is objected to because of the reference to claims 1 and 13 in the first and last paragraphs on page 1 of the specification. The Examiner points out that claims 1 and 13 could be amended in the future and thus not correspond with the description as provided on said page 1.

CLAIMS

Objections

✓

Claims 1-14 are objected to because claim 1 fails to separate each step of the claimed method (and likewise for each element in the apparatus of claim 13) by a line indentation as per 37 CFR 1.75(i). MPEP 608.01(i).

35 U.S.C. § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

✓ Claim 6 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicant regards as the invention because of the following:

A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 6 recites the broad recitation of "no more than 80", and the claim also recites "notably between 60 and 80" which is the narrower statement of the range/limitation.

35 U.S.C. § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2, 4, 7, 8, 13, and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by PCT Document WO 00/24314.

PCT document WO 00/24314, as cited by the Applicant as admitted prior art, discloses a method of forming an X-ray layer image of an object (11) to be examined by means of an X-ray device which includes an X-ray source (6) and an X-ray detector (5), the X-ray source and the X-ray detector being displaced in an angular range around the object to be examined in order to acquire X-ray projection images from different directions (page 4, lines 2-7),

characterized in that the X-ray layer image is formed directly from the X-ray projection images (page 4, lines 10-15),

the X-ray layer image being situated in a plane (27) which extends essentially perpendicularly to the bisector of the angular range, and that the angular range amounts to less than 180 degrees (figs. 1 & 2 show a range of less than 180 degrees).

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With regards to claim 2, the fact that the prior art teaches that the X-ray source and X-ray detector are displaced in an angular range clearly demonstrates that the position of the angular range relative to the object to be examined "can" be changed (fig. 5).

With regards to claim 4, the prior art clearly teaches the claimed subject matter thereof (fig. 5).

With regards to claim 7, the prior art suggests that a plurality of X-ray layer images of the object to be examined will be formed due to the fact that the X-ray device (5 & 6) is displaced throughout an angular range. Furthermore, these plurality of images are interpreted as being "essentially parallel to one another" because the images will be slightly offset by one another due to the movement of the X-ray device but nonetheless formed on the same plane and thus "essentially" parallel to one another.

With regards to claim 8, the device of the prior art as depicted in fig. 3 is interpreted as a "C-arm" X-ray device as claimed.

With regards to claim 13, said claim is directed to the device for carrying out the method of parent claim 1. Thus the Examiner directs the Applicant's attention to the above comments pertaining to claim 1, for the Examiner's interpretation of the prior art's teaching of the claimed 13 subject matter can be clearly seen therefrom.

With regards to claim 14, the device of the prior art as depicted in fig. 3 is interpreted as a "C-arm" system as is claimed.

35 U.S.C. § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3, 5, 6, and 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over by PCT Document WO 00/24314.

With regards to claim 3, the prior art fails to explicitly teach the angular range as claimed. However, it would have been obvious to one having ordinary skill in the art armed with said teaching that the range of the prior art could lie in the range as claimed. The motivation being that the prior art clearly shows in fig. 5 that a range does exist, but the prior art fails to teach the limits of such a range because the extension of the arrow "R" beyond the device (6) suggests that the range is actually larger than explicitly shown in fig. 5. Thus, one having ordinary skill in the art would have reason to believe that the range would extend on to be between 90 to 180 degrees as claimed.

With regard to claims 5 and 6, the prior art is silent as to the number of images acquired. However, it would have been obvious to one having ordinary skill in the art to acquire the range of images as claimed. The motivation being that the prior art does acquire X-ray projection images but does not set any minimum or maximum as to the number of images acquired. Therefore, the prior art would be capable of acquiring the number of images as claimed, and one having ordinary skill in the art would have motivation to acquire as many images as necessary to produce a quality image wherein the production of 60 to 80 images would result in a quality image.

With regards to claim 9, the prior art is directed to a tomography device, and thus one having ordinary skill in the art would have knowledge that in such a device a plurality of layer images are combined to form a layer image of a "thicker slice".


With regards to claim 10, the prior art teaches a circular trajectory for the X-ray source but a straight trajectory for the X-ray detector. However, it would have been obvious to one having ordinary skill in the art to use a circular trajectory for the X-ray detector in place of the taught straight trajectory. The motivation being in order to create symmetry between the X-ray source and the X-ray detector.

Furthermore, if the prior art was modified as argued above with respect to claim 10, the prior art, as taught, would then suggest the claimed subject matter of claims 11 and 12.

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CONCLUSION

Any inquiry concerning this communication should be directed to Eric S. McCall at telephone number (703) 308-6968.


Eric S. McCall
Primary Examiner
Art Unit 2855
June 23, 2003